

*Synopsis of Species.*

- I. Zoëcia visible throughout.
- A. Peristomes high, sharply reflexed ..... *spatiosa*.
- B. Peristomes low.
- a. Zoëcia long :
- (1) plain, irregular ; zoarium irregular ..... *compressa*.
- (2) plain, regular ..... *Sawagei*.
- (3) striated :
- peristomes flush ; zoëcia cylindrical .... *portlandica*.
- peristomes raised ; zoëcia fusiform ..... *striata*.
- b. Zoëcia short ..... *Allaudi*.
- II. Central zoëcia seen throughout ; peripheral zoëcia visible only at ends.
- A. Zoarium discoid ..... *Archiaci*.
- B. Zoarium irregular :
- (1) peristomes low :
- mouth of normal size ..... *diluviana*.
- mouth small ..... *parvitubulata*.
- (2) peristomes raised ..... *boloniensis*.
- III. Zoëcia visible only at ends.
- A. Zoëcia regularly arranged.
- Zoarium discoid ; peristomes not crowded ..... *scobinula*.
- Zoarium irregular ; peristomes very crowded .. *coartata*.
- B. Zoëcia irregularly arranged.
- Zoarium discoid ..... *verrucosa*.
- Zoarium irregular ..... *exilis*.

VI.—*A new West-Indian Tanaid.*

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[Plate IV.]

## ISOPODA CHELIFERA.

## Family Tanaidæ.

## DOLICOCHELIA, gen. nov.

The eye-lobes not soldered to the head ; the eyes pigmented.

First antennæ very elongate, with the flagellum multi-articulate, not hirsute.

Masticatory organs in the male obsolete.

First gnathopods of the male chelate, having the three basal joints short and little tumid, while the following three are extremely elongated and rather slender.

Uropods biramous, the outer branch minute but distinctly two-jointed, the inner multiarticulate.

The name (formed from *δολιχός*, long, and *χηλή*, a claw)

*Ann. & Mag. N. Hist. Ser. 6. Vol. xvii.*

points to the close relationship which this genus bears to *Leptocheilia*. It is, in fact, inosculant between *Leptocheilia*, Dana, and *Heterotanais*, Sars. The latter is distinguished from the former by two characters, its subchelate first gnathopods and its uropods with a two-jointed outer branch. In the second of these characters it agrees with *Dolichocheilia*, from which it is strongly distinguished in regard to the gnathopods. To have had to separate *Dolichocheilia* from *Leptocheilia* merely on the ground that the minute outer branch of the uropods is two-jointed in the one and unarticulate in the other, might have been necessary, but would have been a hard necessity. The new West-Indian genus, however, is fortunately not dependent solely on so small a difference, being strikingly separated from both the nearly related genera by the slenderly elongated first antennæ and first gnathopods.

*Dolichocheilia Forresti*, sp. n.

The front margin of the head-shield projects but slightly, forming a very obtuse angle, the corners being shallowly excavate for the ocular lobes. The part of the shield to which the first gnathopods (or chelipeds) are attached is wider than the front. The pleon at its base is as wide as the trunk, but narrows distally with a gentle curve; the sixth segment, which is very little longer than that preceding it, ends in an obtuse angle similar to that of the frontal margin.

The eye-lobes have a convex outer margin and are not very sharply pointed in front. The pigment is black in the mounted specimen.

*First Antennæ*.—These are as long as the animal from the front of the head to the apex of the pleon. The first joint is dilated at the base, for the rest slender, its length forming two fifths of the whole antenna. The second joint is rather less than three quarters the length of the first. The third is a fifth of the length of the second, and so slender as to look like a part of the flagellum, among the eight joints of which the first is the shortest. The joints carry two or three setæ apiece, giving an appearance very unlike that produced by the conspicuous sensory filaments in the adult males of *Leptocheilia* and *Heterotanais*.

*Second Antennæ*.—The first three joints are very small, together not equal to the fourth. The fifth is two thirds the length of the fourth and is distally armed with a seta. The minute tubercle which represents the flagellum carries two setæ. The whole antenna is shorter than the flagellum in the first pair.

*First Gnathopods.*—These chelipeds are remarkable both for the threatening gape of the chela and for their length, which is double that of the animal's body. The second joint is the stoutest, yet not much dilated, a little longer than broad. The third joint is short, almost triangular. The fourth is of great length, narrowest near the base and nowhere very wide. The fifth is still longer, with a curvature at its base adapted for the folding together of these long slender joints; its narrow immovable digit forms less than half of the total length of the joint and ends in a sort of pointed claw over which three setules are distributed, another setule occupying a small prominence of the inner margin near the base of the claw. The movable finger is somewhat longer than the immovable one, slender, pointed, curved, with irregular margins.

*Second Gnathopods.*—As usual in this group, these are gnathopods only in name, and differ but slightly from the following ambulatory feet. They are scarcely, if at all, larger than the fifth peræopods, having the second joint narrower, but the fourth and fifth joints a little wider than is the case in that pair.

*Peræopods.*—The general structure is the same in all. The second joint is the longest, in the last three pairs somewhat dilated. The third joint is very short, the fifth joint is a little longer than the fourth, and the sixth considerably longer than the fifth. There are some spinules about the distal end of the sixth joint. In the first and second pairs the finger is small, in the other three pairs it is nearly as long as in the second gnathopod.

*Pleopods.*—All the five pairs are constructed as in *Leptochelia*.

*Uropods.*—The peduncles are a little longer than broad. The inner branch has six joints, of which the first is the widest, the fourth the longest. The outer branch has two joints, together not equalling the length of the first joint of the inner branch. All the joints of the branches are setiferous.

*Length.*—From head to tail the specimen measured less than a tenth of an inch.

*Habitat.*—The single specimen (a male) comes from Antigua, where it was found at Long Island, at the mouth of Parham Harbour, in shallow water, with sandy bottom, covered with algæ, by Mr. W. R. Forrest; and I do myself the pleasure of associating the species with the name of that acute observer.

From an unmounted specimen with which Mr. Forrest has favoured me since the above description was passed for press it appears that the lateral margins of the head anteriorly are slightly concave, that the first three free segments of the peræon are very decidedly shorter and a little broader than the following three, that, viewed dorsally, there is a constriction between the third and fourth and between the fourth and fifth free segments, and that the first five segments of the pleon are slightly broader than the immediately preceding segments of the peræon. In both specimens the mouth-organs appear to be in a very rudimentary condition.

In his recent contribution to the Crustacea of the Plankton Expedition Dr. H. J. Hansen gives some weighty reasons for adopting the view that the families of the Apseudidæ and Tanaidæ should form a separate order, which he calls Tanaidacea, coordinate with the Amphipoda, Isopoda, and Cumacea. I shall not easily be convinced that the new order is required. It is much more a question of convenience than of scientific accuracy. Though the two families in question have points in common with the Amphipoda and Cumacea, they are trenchantly distinguished from both of those groups. On the other hand, they have the dorso-ventrally depressed body which is so prevalent among the Isopoda, and in detail they show several points of agreement with various members of the Isopodan families. Thus the peculiarity in *Aapseudes* that the second antennæ have an exopod has its parallel in *Stenetrium* and *Janira*. In *Stenetrium*, Haswell, and *Phreatoicus*, Chilton, the first gnathopods have a prehensile hand to some extent equivalent to that found in the Apseudidæ and Tanaidæ. In the Gnathiidæ and the Cryptoniscian forms among the Epicaridea there occur pleopods strongly resembling forms of those appendages in the families just mentioned. The uropods of the Tanaidæ cannot be considered remote from those of the Asellidæ; and the coalescence of the first peræon-segment with the cephalon is exhibited in a more or less marked degree in the male sex of the Gnathiidæ.

In regard, then, to the acceptance of the proposed new order, Tanaidacea, in exchange for the group of the Isopoda Chelifera, the important question arises, *cui bono*? For whose advantage will the change be made? So long as the higher classificatory divisions are capacious, they hold out a welcome to new discoveries; but when their boundaries are contracted, the next new species is liable to find itself left out in the cold, and then perhaps a new order must be established for a solitary form. Moreover, when the breaking-up of a fairly

satisfactory group is once begun, the process is likely to continue, since the importance of differences on which suborders and families have been established can be magnified at will to justify the elevation of a family to the rank of a suborder, and of a suborder to the rank of an order.

*Note on Apseudes Latreillii (Milne-Edwards?).*

In the description given of this species by Professor G. O. Sars in 1880, and more fully in 1886, it is stated that the segments of the peræon are without ventral spines. In the description of it by Norman and Stebbing, published in 1886, it is said that the carapace and peræon-segments are "without spiny armature either on the sides or ventral surface, except that the last segment of the peræon has a large spine-like projection on the middle of its under surface." These statements appear to need a little modification, for, among numerous specimens dredged this summer in Salcombe estuary, a few, not otherwise distinguishable from the rest, show a ventral spine on the fourth as well as one on the seventh peræon-segment. The spine in question is pointed slightly forward, and arises from the middle of the hinder part of the ventral surface of the segment. Being placed just between the legs it is not always easy to detect, though its size is considerable.

EXPLANATION OF PLATE IV.

Dorsal view of the specimen, with both pairs of antennæ and both uropods, but the limbs of the left side only.

*n.s.*, natural size.

*oc.*, front of head with the eyes.

*a.s.*, upper antenna; *a.i.*, lower antenna; *gn. 1*, first gnathopod (or cheliped) of the right side; *gn. 2*, second gnathopod; *pp. 1-5*, the five peræopods; *plp.*, one of the pleopods; *ur.*, terminal portion of pleon with the uropods.

All the separate parts are magnified to the same scale, with the exception of the cheliped, which is a little less magnified than the others.

VII.—*Descriptions of new Species of Butterflies of the Genus Catasticta in the British Museum.* By ARTHUR G. BUTLER, Ph.D. &c.

THE following species have been in the Museum without names for many years; and, as I find that they are unquestionably not described, I propose to name them now.